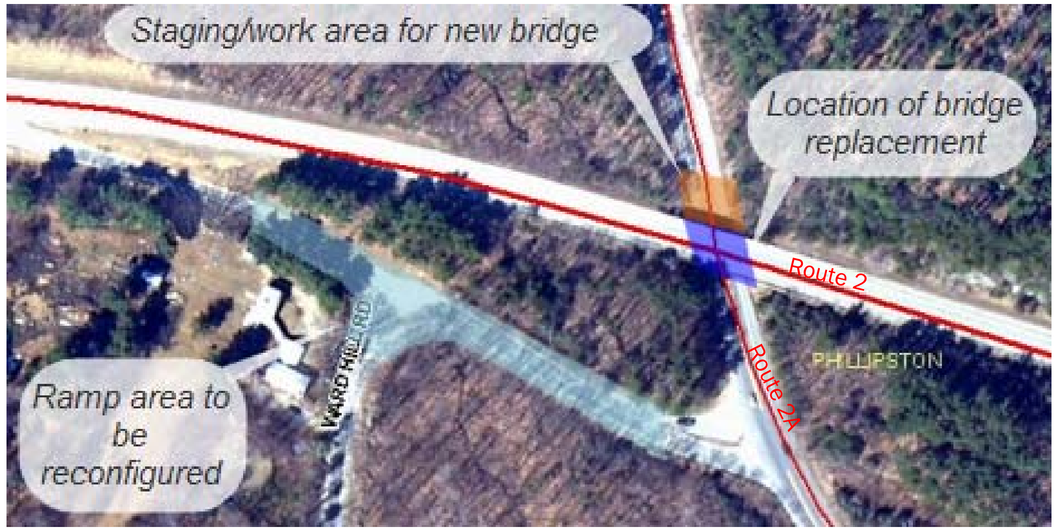
DOING BUSINESS DIFFERENTLY— ACCELERATING CONSTRUCTION, MINIMIZING IMPACTS


Staging/work area for new bridge
Location of bridge replacement
Route 2
Route 2A
PHILLIPSTON
WARD HILL RD
Ramp area to be reconfigured

Accelerated Bridge Program Goals:

To improve the condition of the Commonwealth's Bridges

To stimulate economic development; to create and sustain jobs

To save money by completing projects sooner

To provide access & opportunity for all

To complete projects efficiently and innovatively

To provide transparency and accountability

STAYING INFORMED

In the months preceding the closure of Route 2 and Route 2A (State Road), MassDOT's Accelerated Bridge Program will ensure the travelling public is informed about the closure and alternate routes of travel.

MassDOT will regularly communicate in multiple ways to make sure that the local community and travelling public are well-informed regarding all aspects of this exciting, historic project. Expect to see variable message boards, road signs, flyers such as this one on the web, MassDOT blog postings, tweets, and more.

You can learn more about this project by viewing the materials used during the presentation at the most recent public information meeting. You can also look up information about this and any other MassDOT project by using *Project Info* on the MassDOT site. You may also contact MassDOT for more information at *feedback@state.ma.us.*

View looking south along Rte 2A at the existing bridge

ABP home page:
www.mass.gov/acceleratedbridges

MassDOT Blog:
www.mass.gov/blog/transportation

A variable message board

Visit us online!

Commonwealth of Massachusetts

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DOING BUSINESS DIFFERENTLY

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SPS New England, Inc. & TranSystems Corporation

Owner's Representative:
Maguire Group

Project Info #: 603495

Structure Description:
Phillipston– Bridge Replacement, P-09-004, Route 2 over Route 2A (State Road)

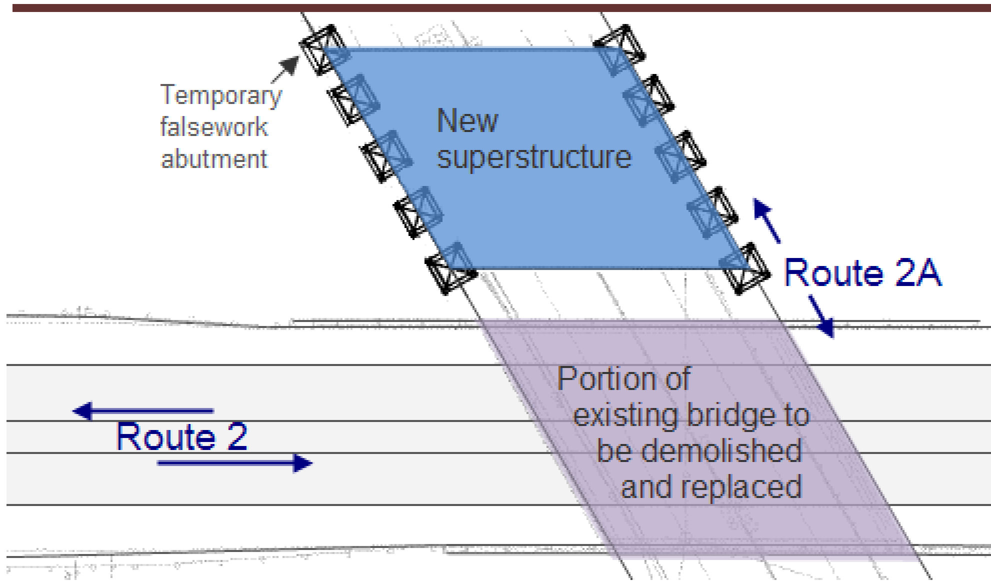
ACCELERATED BRIDGE CONSTRUCTION COMES TO MASSACHUSETTS

Build a bridge but barely impact traffic? Build a bridge, but only be allowed to close it for eight-and-a-half days? Construct a bridge start-to-finish in just five months? It may sound unlikely, but it's going to happen in Phillipston this year.

When Governor Patrick's Accelerated Bridge Program talks about doing business differently, it means it. The ABP is setting high expectations for bridge projects and the industry is proving that, with innovation, bridges can be built efficiently, safely, and with minimal user and community impacts during construction.

The existing bridge which carries Rte. 2 over Rte. 2A in Phillipston, Mass.

This fall, for the first time, MassDOT will build and install a replacement superstructure using innovative Accelerated Bridge Construction methods. The bridge being replaced carries Route 2 over Route 2A/State Road in Phillipston. The bridge superstructure will be constructed on temporary abutments adjacent to the existing bridge. This will be done without closing any of the bridge's travel lanes to vehicles, so there should be no effect on Route 2 traffic.


Temporary falsework abutment
New superstructure
Route 2A
Route 2
Portion of existing bridge to be demolished and replaced

Conceptual sketch provided by SPS New England & TranSystems

Accelerated Bridge Construction

Continued from cover

Anticipated Project Milestones

- Notice to Proceed: April 29, 2010
- Begin Site Preparation: May, 2010
- Construct Superstructure on Temporary Abutments: May—October, 2010
- Close Bridge & Begin Superstructure Installation: October 22, 2010
- Complete Installation & Reopen Bridge to vehicular Traffic: October 31, 2010
- Project Area Clean-up & As-Built Submission: November, 2010

During this time, Route 2A, which carries only a light volume of traffic underneath the bridge, will be reduced to one lane in each direction during normal construction hours. We do not expect any significant traffic delays to occur on Route 2A because of the lane reduction.

Once the new superstructure is complete, it will be lifted into place using a gantry system of track, rollers, and hydraulic jacks. To make room for the new superstructure, the existing bridge will need to be demolished. In order to demolish the old superstructure and install the new, complete superstructure the bridge will be closed for no more than 202 consecutive hours. The closure will begin on a Friday, after rush hour.

Accelerated Bridge Construction (ABC) includes many methods of rapidly building bridges or major bridge elements in a nearby location and installing them quickly using heavy lifting equipment such as cranes, gantry systems and Self-Propelled Motorized Transporters.

The objective of ABC is to reduce the negative effects of bridge construction, such as traffic delays and economic impacts. ABC compresses the work that will cause impacts into a small window of time: in this case, 202 consecutive hours. In contrast, conventional staged construction demolishes and replaces bridges section by section, requiring lane closures lasting for years. In some cases, a bridge will be closed completely, demolished, and built-in-place, causing long-term detours. By using new ABC techniques on this project, MassDOT will reduce the duration of construction from three years to just one construction season. In fact, the bridge will be completed and reopened to traffic by November 1, 2010.

> *ABC compresses the work that will cause impacts into a very brief period of time. Design/Build compresses the project schedule from concept to completion.*

In order to ensure the bridge will be reopened on or before November 1, 2010, MassDOT will analyze each step of construction to make sure that the project stays on track with a tight schedule.

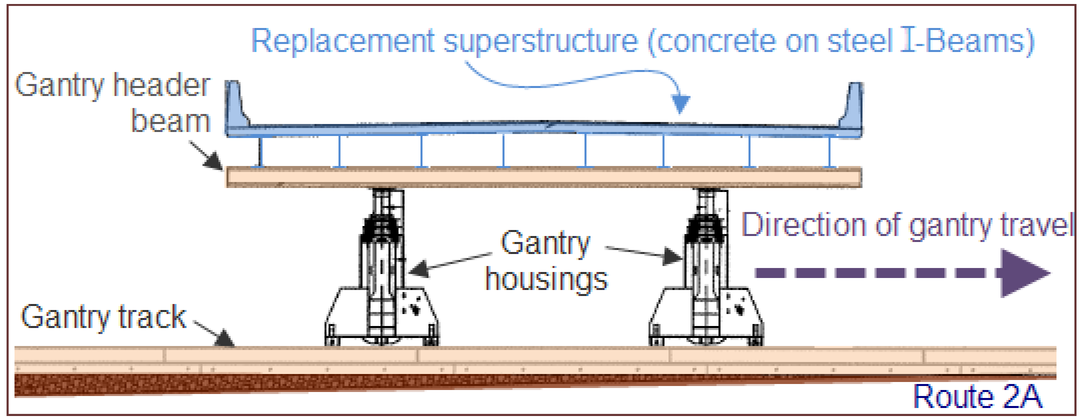
One of the keys to this project's accelerated delivery is that the contractor and designer are working together for the Commonwealth as a single entity in a Design/Build relationship. Since the designer, TranSystems, and the contractor, SPS New England, are working together, the design and construction can overlap, dramatically advancing the start date of construction and the overall schedule. This is an incredible benefit of Design/Build for MassDOT and the travelling public.

MassDOT's fast start to this project is an excellent example of how the ABP has streamlined processes to deliver complete projects sooner. The ABP team issued a Notice-to-Proceed within eight days of the bid opening and will expedite its review of design plans.

Making a promise to have a bridge designed, built and installed in one construction season is ambitious, but it's a promise that, through the use of ABC, design/build and great teamwork, the ABP will fulfill.

View of gantry system looking east.

The new superstructure will be moved into place using a gantry system of jacks, rails, and rollers.


Replacement superstructure (concrete on steel I-Beams)
Gantry header beam
Gantry housings
Direction of gantry travel
Gantry track
Route 2A

Sketch provided by SPS New England & TranSystems

On the Cutting-Edge Statewide

In its first years, Governor Patrick's $3 Billion Accelerated Bridge Program has given a kick-start to reversing Massachusetts' trend of deteriorating bridges. The ABP and statewide bridge program have already reduced the number of structurally deficient bridges* by nine percent. The Phillipston project is showing how the ABP can accelerate individual projects.

> *The number of structurally deficient bridges has already been reduced by 9%*

The Phillipston Project— its innovative procurement, management, and method of construction— is an exciting example of how the ABP is doing business differently and getting projects completed quickly while reducing the headaches so often caused by construction.

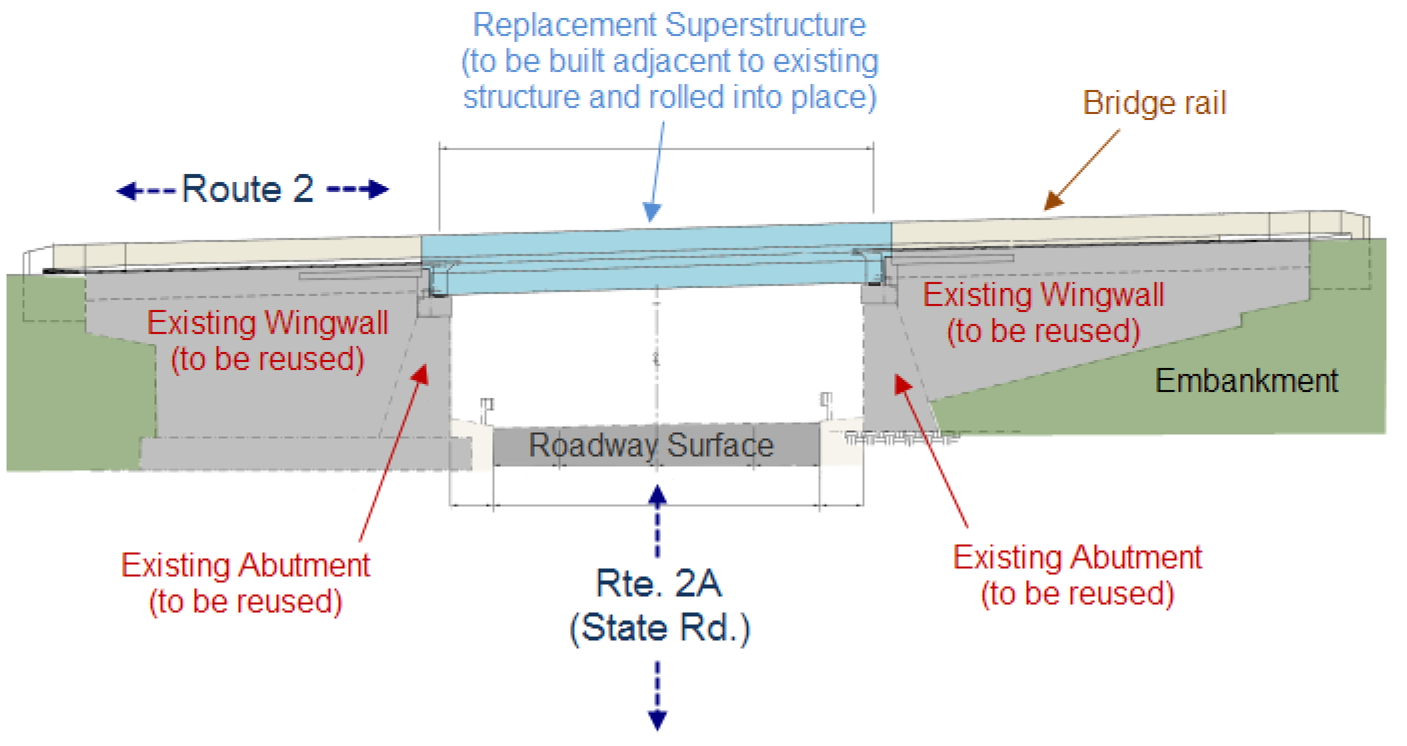
This project will be one of many projects across the state to use Accelerated Bridge Construction methods. As a matter of fact, all Accelerated Bridge Program projects are evaluated to determine if using ABC techniques is appropriate.

To be a good candidate for Accelerated Bridge Construction, the bridge must meet the following criteria: utilities, if present, must be easy to relocate; there must be a nearby location for the construction and staging of the replacement structure; and the bridge must be able to be fully closed for a brief period of time. Of course, the project should warrant the use of accelerated bridge construction techniques. If it is unacceptable to have long-term lane closure or delays on a structure, or if it carries a high volume of traffic, the ABP will determine if it meets other criteria for accelerated bridge construction. Finally, the ABP considers the cost of accelerated bridge techniques, comparing it with the cost of conventional construction.

The ABP has accelerated bridge construction projects in development across the Commonwealth, including bridges in Wellesley, Mattapan, Hyde Park, West Springfield, Swansea, and Taunton. The Accelerated Bridge Program is considering using accelerated bridge construction techniques in several other bridge replacement projects, too.

We are certain that the use of accelerated techniques will significantly reduce construction-related traffic delays statewide— something every road user can appreciate.

Anatomy of the Bridge


Replacement Superstructure (to be built adjacent to existing structure and rolled into place)
Bridge rail
Route 2
Existing Wingwall (to be reused)
Existing Wingwall (to be reused)
Embankment
Roadway Surface
Existing Abutment (to be reused)
Rte. 2A (State Rd.)
Existing Abutment (to be reused)

Conceptual Square Longitudinal Section of Proposed Bridge

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*MassDOT bridges formerly of MassHighway and DCR